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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,429	07/29/2003	Alpaslan Demir	I-2-0368.1US	6035
24374	7590	06/08/2006	EXAMINER	
VOLPE AND KOENIG, P.C. DEPT. ICC UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			WANG, TED M	
			ART UNIT	PAPER NUMBER
			2611	
DATE MAILED: 06/08/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/629,429		DEMIR, ALPASLAN	
	<b>Examiner</b>		<b>Art Unit</b>	
	Ted M. Wang		2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-24 and 27-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22,23,28,29 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 24,27,30 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>23 March 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 March 2006 has been entered.

### ***Response to Arguments***

2. The indicated allowability of claims 22-24 and 27 are withdrawn in view of the newly discovered reference(s) to Kurihara et al. (US 5,574,754). Rejections based on the newly cited reference(s) follow.

### ***Drawings***

3. The drawings are objected to because

- Fig.2, element 30, change " AGC" to --- AFC ---, and between element 30 and 60, change "AGC\_ENABLE/DISABLE" TO --- AFC\_ENABLE/DISABLE ---.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claims 22-24 and 27-31 are objected to because of the following informalities:

- In claims 22-24 and 27-31, the limitation of “ Step 1 processor for Step 1 processing” is indefinite, since the term “Step 1” processor or step 1 processing is not commonly known to the art of a general communication field and has not been defined in the claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 22, 23, 28, 29 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 2001/0021199) in view of Gunzelmann et al. (US 6,532,255) and Kurihara et al. (US 5,574,754).

- With regard claim 22, Lee et al. discloses an apparatus comprises:
  - a Step 1 processing of a given sequence (paragraphs 7 and 8);
  - a first correlator or (match filter) (Fig.5 element 500) for determining a correlation between said given sequence and a stored sequence (paragraphs 35 and 36);

a second correlator (or match filter) (Fig.5 element 501) for determining a correlation between said given sequence and a stored sequence (paragraphs 35 and 36);

an error estimator (Fig.3 element 261 and Fig.5) for determining the error associated with the outputs of the first and second correlators (Fig.3 element 302 output  $\omega$  and Fig.5 element 550 output  $\omega$ ); and

a numeric controlled oscillator (NCO) for adjusting frequency responsive to the integrated error estimate (Fig.3 element 303); and

an averager (Fig. 5 element 530) for averaging the first (Fig. 5 element 500), second (Fig. 5 element 510), and third (Fig. 5 element 520) estimates.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the correlation with a matched filter since the examiner takes Official Notice of the equivalence of (matched filter) and (correlator) for their use in the receiver circuit and the selection of any of these known equivalents to maximize the signal with respect to unwanted signal.

Lee et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching

- a) the stored sequence which has been altered in phase and
- b) a filter for selectively integrating the error estimate responsive to an initial or steady state conditions of the cell search process.
- c) an estimator for providing first, second, and third offset estimates.

However, Gunzelmann et al. teaches a) the stored sequence which has been altered in phase that first means for applying a positive phase rotation to said stored sequence (Fig.1 element 111 and column 4 lines 32-53) and second means for applying a negative phase rotation to said stored sequence (Fig.1 element 110 and column 4 lines 32-53), wherein, the elements 110 and 111 have the same frequency since they are only different from the phase (one is shifted in positive phase (+  $\Delta$ ) and the other is shift in negative phase (-  $\Delta$ )).

It is desirable to have the stored sequence which has been altered in phase in order to facilitate the accurate demodulation process (column 5 lines 10-15) so that the receiver quality is improved.

Gunzelmann et al. further teaches b) a filter for selectively integrating the error estimate responsive to an initial or steady state conditions (Fig.1 element 107).

It is desirable to have a filter for selectively integrating the error estimate responsive to an initial or steady state conditions in order to smooth the DC control voltage. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the DLL circuit as taught by Gunzelmann et al. in which, the stored sequence which has been altered in phase and a filter for selectively integrating the error estimate responsive to an initial or steady state conditions, into Lees' frequency error compensator in order to facilitate the accurate demodulation process and smooth the DC control voltage so that the receiver quality is improved.

Lee et al. and Gunzelmann et al. disclose all of the subject matter as described in the above paragraph except for specifically teaching c) an estimator for providing first, second, and third offset estimates.

However, Kurihara et al. teaches c) an estimator for providing first (early), second (punctual), and third (late) offset estimates (Fig.7a elements 27/28 and 41-7 – 41-12, and column 7 lines 39-61, and column 8 lines 26-36) in order to improve the initial synchronization of the receiver so that the communication performance is improved. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the estimator circuit as taught by Kurihara et al. in which, having an estimator for providing first, second, and third offset estimates, into Lee and Gunzelmanns' error estimation circuit (Fig.5 element 302) in order to improve the initial synchronization of the receiver so that the communication performance is improved.

- With regard claim 23, all limitation is contained in claim 22. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 28, which is a method claim related to claim 22, all limitation is contained in claim 22. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 29, all limitation is contained in claim 22. The explanation of all the limitation is already addressed in the above paragraph. It is inherent that the operation as recited in claim 28 (b)–(f) is repeated number of time.

- With regard claims 31 and 32, Lee further teaches that the given sequence is a primary synchronization code (PSC) sequence (Fig.2 element 252 and paragraphs 35 and 36) and the receiver adjuster is a numerically controlled oscillator (Fig.3 element 303). All other limitation is contained in claim 22. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 33, all limitation is contained in claim 31. The explanation of all the limitation is already addressed in the above paragraph. It is inherent that the operation as recited in claim 31 (b)–(f) is repeated number of time.

#### ***Allowable Subject Matter***

7. Claim 27 would be allowable if rewritten to overcome the objection(s) set forth in this Office action.
8. Claims 24, 30 and 34 are objected to as being dependent upon an objected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

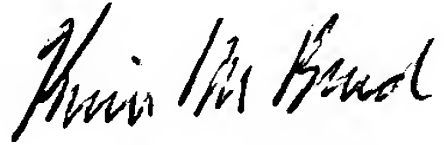


Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang  
Examiner  
Art Unit 2611

Ted M. Wang

  
**KEVIN BURD**  
**PRIMARY EXAMINER**